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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,469

09/28/2004

Shinsuke Ide

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

05/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,469	Applicant(s) IDE ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4 to 10 and 12 to 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 to 10 and 12 to 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 10, 2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The preamble of claim 1 recites "a metallic material for fuel cells". Hence fuel cell is the future use for the metallic material yet claim 1 actively recites metallic material "in use at a cell operating temperature ". To add clarity to claim, it is recommended to use language such as ---when in use at a cell operating temperature----.

5. Claim 12 is confusing because it recites "cold rolling **or** cold rolling, annealing and then pickling" yet its parent claim 10 recites "cold rolling the steel material; **and** annealing the steel material".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 4 to 10, and 12 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over European patent 1207214 (hereinafter EP'214), cited by applicant in IDS dated 10-19-05.

8. EP'214 in claims 1 to 17 on pages 14 and 15 discloses a metallic material having a composition with constituents whose wt% ranges overlap those recited by the claims; and such overlap renders applicants' composition prima facie obvious because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches same utility (fuel cell) and similar high temperature mechanical properties and oxidation resistance, see MPEP 2144.05.

9. More specifically, prior art steel Nos. 8 to 10 and 12 in table 1 on page 10 closely approximate the claimed composition and when calculated, satisfy the claimed Mo/Nb ratio limitation of 0.3 to 0.57. Even though some of the prior art examples do not contain small amounts of Sc, Y, La, Ce, Pr, Nd, Pm, Sm, Zr or Hf as recited by the claims, such would be obvious to incorporate since EP'214 in paragraphs [0045] and [0046] teaches optionally adding these elements to improve oxidation resistance.

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10 In regard to precipitation, table 2 on page 12 of EP'214 discloses steels containing Fe-Cr intermetallic compound precipitation, and paragraph [0024] teaches adding Si to accelerate precipitation (same reason as stated on page 16, lines 13-21 of applicant's specification).

11. Moreover, EP'214 in paragraph [0049-0050] discloses subjecting steel to hot rolling, annealing, pickling, cold rolling and/or annealing in the same manner as Applicants' method claims. Also paragraph [0054] further subjects steel at 900°C in air for 400 hours, which would cause precipitation; and hence be equivalent to the recited aging step (note applicants' aging temperature is between 500-900°C).

12. Even though conductivity property and the mass percentage of precipitates at $\geq 0.01\%$, and $\geq 0.03\%$ during operating use as recited by one or more of the claims are not taught by prior art, such properties would be expected since composition and process of making are closely met, and in absence of proof to the contrary.

13. EP'214 in paragraph [0058] discloses steel for fuel cells having high temperature resistance properties at 900°C. Hence using fuel cell at operating temperature of 800°C for at least 1,000 hours as recited by one or more the claims would be expected.

14. Although making fuel cell by subjecting metallic material to cutting, corrugating, etching as recited by claims 15 to 17 are not taught by prior art, such would not be a patentable difference since said process steps are conventional and well known in the art in producing fuel cells, and therefore would be implicit when making prior art fuel cell.

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15. Claims 1, 4 to 10, and 12 to 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb (US Patent 6,641,780).

16. Grubb in claims 1 to 10 of columns 21-22 and lines 31 to 60 in column 8 discloses a metallic material having a composition with constituents whose wt% ranges overlap those recited by the claims; and such overlap renders Applicants' composition prima facie obvious because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure the prior art since the prior art teaches the same utility (making fuel cell) and similar high temperature mechanical properties and oxidation resistance, see MPEP 2144.05.

17. More specifically, Grubb discloses steel examples in Table 1 of column 9 which closely meet the claimed composition and when calculated, satisfy the claimed Mo/Nb ratio of 0.3 to 9.57.

18. In addition, Grubb discloses intermetallic compound precipitation comprising Cr oxides (lines 14 to 30 in column 6), Fe precipitates (line 1-2 in column 7) and Si promoting the precipitation of laves phase (lines 33—43 in column 8). Even though prior art does not teach the Fe, Cr and Si precipitation area percentage of 0.01% or more and 0.03% or more during operating use as recited by the claims, such would be expected since composition and process of making are closely and in absence of proof to the contrary.

19. In regard to method, Grubb on lines 10-21 in column 10 discloses subjecting steel to hot rolling, annealing, pickling, and cold rolling in the same manner as present

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invention. Also lines 7 to 18 in column 21 disclose the additional step of precipitation hardening at 871 to 999°C.

20. Grubb on lines 1-26 in column 1 uses metallic material for interconnects of solid-oxide fuel cells, and in figures 2-8 exhibit excellent heat resistance properties at 800-900°C. Hence using fuel cell at operating temperature of 800°C for at least 1,000 hours as recited by one or more the claims would be expected.

21. Although making fuel cell by subjecting metallic material to cutting, corrugating, etching as recited by claims 15 to 17 are not taught by prior art, such would not be a patentable difference since said process steps are conventional and well known in the art in producing fuel cell and therefore would be implicit in making prior art fuel cell.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00am-2: 30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
A.U. 1742

DY